

**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ALABAMA
SOUTHERN DIVISION**

BOBBY GLEN BROWN; }
ELIZABETH BROWN, }

Plaintiffs, }

vs. }

FORD MOTOR COMPANY, }

Defendant. }

MEMORANDUM OPINION

This case is currently before the court on plaintiffs Bobby Glen Brown and Elizabeth Brown’s (“the Browns”) Motion to Exclude the Testimony of Colm Boran, (doc. 72),¹ as well as the following two motions by defendant Ford Motor Company (“Ford”): Motion to Exclude Plaintiffs’ Designated Expert, Geoffrey Mahon, Under Rule 702, (doc. 78); and Motion to Exclude Plaintiffs’ Designated Expert, Patrick Donahue. Under Rule 702, (doc. 82). Based on the record, the submissions of the parties, the arguments of counsel, and the relevant law, the court is of the opinion that the motions to exclude Boran’s, Mahon’s, and Donahue’s opinions are due to be denied in part and granted in part.

¹ Reference to a document number, [“Doc. ____”], refers to the number assigned to each document as it is filed in the court’s record.

I. LEGAL STANDARD FOR ADMISSION OF EXPERT TESTIMONY

The admissibility of expert testimony is governed by Rule 702 of the Federal Rules of Evidence, which provides that expert testimony should be admitted “if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.” Fed. R. Evid. 702 (2000). This rule was amended to its present form as a result of the Supreme Court’s decision in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, which held that a trial court confronted with expert *scientific* testimony must determine “whether the expert is proposing to testify to (1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact in issue.” 509 U.S. 579, 592 (1993). The first of these issues is a question of reliability, the second of relevance. *See id.* at 590–91. In this “preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue,” *id.* at 592–93, the court’s focus is “solely on principles and methodology, not on the conclusions that they generate,” *id.* at 595. As the *Daubert* court notes, “[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.” *Id.* at 596.

The Eleventh Circuit has restated the trial court's obligations under Rule 702 and *Daubert* in a way that is pertinent to these motions, addressing the expert's qualifications in addition to the expert's actual testimony:

- (1) the expert is qualified to testify competently regarding the matters he intends to address; (2) the methodology by which the expert reaches his conclusions is sufficiently reliable as determined by the sort of inquiry mandated in *Daubert*; and (3) the testimony assists the trier of fact, through the application of scientific, technical, or specialized expertise, to understand the evidence or to determine a fact in issue.

See U.S. v. Frazier, 387 F.3d 1244, 1260 (11th Cir. 2004).

The court in *Daubert* identified the following non-exclusive factors for courts to use in determining whether a theory or technique is scientific knowledge that will assist the trier of fact: (1) whether the theory can and has been tested; (2) whether the theory has been subjected to peer review and publication; (3) the known or expected rate of error; and (4) the general acceptance of the theory in the relevant scientific community. *See id.* at 593–94. In *Kumho Tire Co., Ltd v. Carmichael*, the Supreme Court extended *Daubert*'s interpretation of Rule 702 to non-scientific expert testimony, *see* 526 U.S. 137, 149 (1999), and it also clarified that the *Daubert* factors do not constitute a definitive test, but “may or may not be pertinent in assessing reliability, depending on the nature of the issue, the expert's particular expertise, and the subject of his testimony,” *id.* at 150 (internal quotations omitted). In reaching any opinion regarding the admissibility of expert testimony under Rule 702 and *Daubert*, the court must be careful not to abandon

its gatekeeping role, *see McClain v. Metabolife Int'l, Inc.*, 401 F.3d 1233, 1238 (11th Cir. 2005); although the district court is given broad discretion to admit or exclude expert testimony, “it is discretion to choose among *reasonable* means of excluding expertise that is *fausse* and science that is *junky*,” *see Kumho Tire*, 526 U.S. at 159 (Scalia, J., concurring) (emphasis in original).

II. DISCUSSION

A. Testimony of Colm Boran

The Browns seek a blanket exclusion of the testimony of Colm Boran (“Boran”), Ford’s expert on the design and manufacture of the air bag deployment system in Ford F-150 trucks, because Boran could not state definitively in his deposition the most likely cause of the air bag deployment that caused the injuries at issue in this case, and because Boran had not personally inspected the wiring in the Browns’s truck. (Doc. 72 at 2–3.) Indeed, Boran admitted in his deposition that he did not know the exact or most likely cause of the air bag deployment, (doc. 73-3, Boran Dep., at 45:9–18, Oct. 9, 2007), and that he had only seen photographs of the subject vehicle, (*id.* at 21:2–6). In the court’s *Daubert* hearing, however, Boran more conclusively stated his findings and clarified for the record that, while he did believe, as the Browns’s experts also did, that the inadvertent air bag deployment in the Browns’s truck was likely caused by an intermittent short to ground,² he did not believe that the short was the result of a manufacturing defect. (Hr’g

² As counsel for both parties informed the court at the *Daubert* hearing, and as Boran himself testified, the parties agree that there was a short to ground, but dispute whether that short

Tr. 43:25–44:19, Aug. 1, 2008.) Boran’s opinions, then, do not relate to what *did* cause the intermittent short to ground that both parties admit contributed to the air bag deployment, but what *did not* cause the short; in other words, Boran’s opinions, which he based on his nineteen years of experience and on testimony from the Browns that Boran found inconsistent with his experience with air bag deployments, is that the air bag did not deploy as a result of a manufacturing or design defect. Thus, any uncertainty in Boran’s testimony regarding the actual cause of the air bag deployment does not, by itself, undermine the admissibility of his testimony about what did *not* cause the deployment. At most, any uncertainty or inability to identify the most likely cause of the deployment would affect only the admissibility of Boran’s opinions on the actual cause. The court now turns to Boran’s qualifications and the admissibility of each of his opinions in turn.

Boran worked for Ford from 1988 to 2000 and was involved in the design of the same air bag system, the Integrated Air Bag Diagnostic Module-2 (“IABDM-2”), that was used in the 1994 Ford F-150 trucks, the type of truck that the Browns owned. (Doc. 73-2, Boran Expert Report, at 1–2.) Boran continues to work for a Ford subsidiary that designs restraint electronics. (*Id.* at 1.) Boran also personally developed the “dwell enhancer” mechanism that was used in different Ford models but that was effectively disabled in the F-150 trucks after two pre-marketing incidents occurred that resulted in inadvertent air bag deployments upon door slams. (*Id.* at 3–4.) Boran is therefore amply qualified to

to ground was a manufacturing or design defect. (Hrg’g Tr. 42:19–44:2, Aug. 1, 2008.)

render expert opinions about the cause of the air bag deployment in the Browns's 1994 Ford F-150 truck.

In his expert report, Boran reached the following six opinions "within a reasonable degree of engineering certainty":

1. The deployment of the Browns's vehicle's driver side air bag was not caused by the "key ON" diagnostic testing of the dwell enhancer.
2. Based on [Boran's] testing of the subject IABDM-2, the subject IABDM-2 [sic] was equipped with functional and proper resistors, which inhibited the dwell enhancer from conducting enough current to deploy an air bag.
3. Based on [Boran's] review of Patrick Donahue's report and deposition, [Donahue] did not locate the short to ground, which caused the air bag to deploy in the Browns's truck.
4. Because of the presence of aftermarket wiring throughout the subject vehicle, including, but not necessarily limited to aftermarket fog lights, the fact that the vehicle was involved in at least two (2) reported incidents and accidents, had accumulated well over 100,000 miles at the time of the deployment, and was in poor condition, it is more likely than not, the short which caused the air bag deployment was not the result of a manufacturing defect.
5. Because it is more likely than not that the deployment was a result of an intermittent short to ground due to exposed wiring coming in contact with sheet metal or other metallic grounds within the vehicle, the deployment was not the result of a design error in the system.
6. Geoffrey Mahon's opinions regarding the placement of the safing sensor in the 1994 F-series and his proposed alternative design lacks [sic] merit.

(*Id.* at 7–8.)

All of these opinions involve expert knowledge and will assist the trier of fact in determining a fact at issue, namely, whether the cause of the inadvertent air bag deployment was a design or manufacturing defect in the Browns's truck. To reach these opinions, Boran stated that he relied on his experience with air bag systems generally, his knowledge of the IABDM-2 designed for the F-150 trucks, and his personal testing of the subject IABDM-2 that was taken out of the Browns's truck. (*Id.* at 7.) Boran also had access to photographs of the Browns's truck which showed some of its interior wiring. (Doc. 73-3 at 34:4–14.)

Boran's first opinion, that the air bag deployment was not caused by the "key on" diagnostic testing of the dwell enhancer, was based on Boran's experience with the design of the IABDM-2 for the 1994 Ford F-150 model, an air bag system that was modified to reduce the current flowing through the dwell enhancer circuitry and to thereby eliminate the potential for "key on"-induced inadvertent deployments, as well as on Boran's personal observations of the subject IABDM-2, the performance of which Boran found "consistent with design intention." (Doc. 73-2 at 4–5.) As a result, Boran's opinion about the dwell enhancer is due to be admitted because it is based on sufficient facts and on reliable principles, and those principles have been applied reliably to the facts.

Second, Boran testified from his examination of the subject IABDM-2 that the system contained the expected resistors and that they were functioning properly to keep the level of current flowing to the dwell enhancer too low to deploy an air bag. (*Id.* at 5.) As with his first opinion, Boran’s opinion about the resistors meets the requirements of Rule 702 and is due to be admitted.

Boran’s third opinion specifically challenges one of the Browns’s experts, Patrick Donahue (“Donahue”), and posits that Donahue did not actually find the short to ground that caused the air bag to deploy, as Donahue had originally reported that he did. In fact, Donahue’s initial expert report did state that he had located the specific short to ground during his inspection of the Browns’s truck, (doc. 83-4, Donahue Expert Report, at 7), but Donahue amended his report, after Boran’s deposition, to retract that statement and to admit that the “short” he found is “consistent with a disconnected diagnostic monitor module,” (doc. 83-3, Donahue Amended Expert Report, at 2). Ford contends that this “diagnostic monitor module” is what Boran called a “shorting bar,” something that helps prevent unintended air bag deployments during service of a vehicle by “prevent[ing] current from a service technician’s test equipment from reaching the air bag initiator.” (Doc. 86 at 14, Def.’s Opp’n to Pl.’s Motion to Exclude the Test. of Colm Boran; Doc. 73-2 at 7.) Particularly because of Donahue’s effective admission of his error in his amended report, Boran’s opinion as to the accuracy of Donahue’s original testimony is due to be admitted under Rule 702.

Opinions four and five are the ones that most clearly relate to the Browns's objections about Boran's uncertainty and lack of proof regarding the ultimate cause of the air bag deployment. To the extent that both opinions are phrased in negative terms about what did *not* cause the air bag deployment, and provide the rationale for those conclusions, the court generally finds Boran qualified to testify, but to the extent that Boran opines on the actual cause or causes of the air bag deployment, beyond the agreed-upon fact that there was an intermittent short to ground that was somehow involved in the deployment, the court finds that neither Boran nor any other expert proffered is competent to testify under Rule 702.

Boran's fourth opinion, on whether the deployment was caused by a manufacturing defect, is actually the conclusion of three sub-opinions,³ that due to 1) aftermarket wiring in, 2) the previous accidents of, and 3) the age of the Browns's truck, the short that caused the air bag deployment was not likely the result of a manufacturing defect. With respect to the aftermarket wiring subpart, while Boran does state on numerous occasions in his deposition that he has no *physical* evidence to support his theory that aftermarket wiring, and not a design or manufacturing defect, caused the intermittent short to ground

³ Boran does not specify whether he needed to reach all three of these sub-opinions in order to testify to his ultimate conclusion that a manufacturing defect was not the cause of the deployment, or whether he could have relied on just one of these sub-opinions to support his conclusion. The court notes, however, that each of these sub-opinions, if they meet the requirements of Rule 702, would independently supply a factual basis and reliable, scientifically-based reason for Boran to conclude that the deployment was not the result of a manufacturing defect, so only one of these sub-opinions needs to be admissible in order for the conclusion of opinion four to be admissible.

that resulted in the air bag deployment, Boran does identify aftermarket wiring in the Browns's truck from the photographs and states in his report that “[i]ntermittent shorts in a vehicle's wiring are commonly caused by exposed wires that occasionally come in contact with vehicle sheet metal or other grounded metal objects.” (Doc. 73-3 at 35:15–20; Doc. 73-2 at 6.) At the *Daubert* hearing, Boran further explained that, in his experience, there could be shorts to the air bag system even with aftermarket wiring that was not necessarily connected to the air bag system, simply because that new wiring was not in its proper location. (Hr'g Tr. 65:23–66:10.) Boran's observations of aftermarket wiring in the photographs and his past experience with exposed wiring causing shorts to ground is sufficient to render this part of opinion four reliable and admissible.

The next subpart of opinion four, however, regarding whether the two previous accidents make it likely that the air bag deployment was not the result of a design or manufacturing defect, does not have sufficient support from Boran's testimony to meet the requirements of Rule 702. That is, Boran has not established either the factual or the scientific basis needed to reach this opinion. Specifically, Boran admitted in his deposition that his knowledge of the previous accidents stemmed solely from a Carfax report, and not from any independent investigation of any damage to the Browns's truck that might have resulted from these accidents. (Doc. 73-3, at 50:25–52:6.) Without more factual support that there was indeed damage to the truck that might have affected the wiring in the vehicle, coupled with a clearer statement from Boran that, in his experience

or based on other scientific principles, such accidents could result in an inadvertent air bag deployment, this subpart to opinion four is simply too weakly developed to be admissible.

The third subpart of opinion four, Boran's extrapolation that the age of the Browns's truck — its usage over 100,000 miles — is admissible because, like Boran's opinion about aftermarket wiring, this opinion is based on Boran's experience with the frequency of inadvertent air bag deployments in vehicles of various ages. At the *Daubert* hearing, Boran demonstrated his reasoning for the court:

[T]his vehicle had, as I understand it, somewhere around 100,000 or more miles on it. And the work that I've done throughout the years, when I've seen these kind [sic] of inadvertent deployments due to these intermittent shorts, they typically happen earlier in the vehicle[’s lifetime], let's say in the first 10 or 20,000 miles.

(Hr'g Tr. 44:14–19.) This opinion clearly satisfies Rule 702 since it is based on a reliable and observable fact, the vehicle's age, as well as on the reliable application of Boran's extensive experience. Notably, the admissibility of this subpart of opinion four, or the first subpart regarding aftermarket wiring, does not preclude the Browns from attacking Boran's credibility, but any such attacks would go to the weight, not the admissibility, of these sub-opinions and to the ultimate conclusion of opinion four, that the deployment was not the result of a manufacturing defect.

The admissibility of opinion five, which at first glance seems straightforward, since it is also phrased in the negative with respect to causation, is complicated by the fact

that Boran has added to the undisputed fact that the deployment was caused by an intermittent short to ground, the following cause: “due to exposed wiring coming in contact with sheet metal or other metallic grounds within the vehicle.” As mentioned above, the court does not find any statement from Boran or from any other expert regarding the actual cause of the deployment, beyond the agreed-upon premise that there was an intermittent short to ground, admissible under Rule 702; none of the experts, to the court’s knowledge, have supplied sufficient factual bases from which the expert could state, to a reasonable degree of scientific certainty, the actual cause of the inadvertent deployment. Because the ultimate conclusion of opinion five rests upon Boran’s finding that the intermittent short to ground was caused by exposed wiring coming into contact with sheet metal or other metallic grounds within the vehicle, a finding that clearly testifies to an *actual cause* of the intermittent short to ground, and by extension, the air bag deployment, opinion five fails to meet the requirements of Rule 702 and is inadmissible. Boran therefore cannot testify that the air bag deployment was not caused by a design defect.

Finally, Boran’s sixth opinion challenges the opinions of another of the Browns’s RSC experts, Geoffrey Mahon (“Mahon”), regarding whether a design defect in the truck’s “safing sensor” caused the Browns’s injuries. Boran, with his experience in designing not only air bag systems generally, but also the IABDM-2 that was placed in the 1994 Ford F-150 trucks, has clearly applied reliable principles and methods to reach

his opinions regarding the safing sensor's design, and any conflict that exists between Boran's and Mahon's testimony goes to the weight, and not the admissibility, of Boran's opinion.

Because the Browns have objected only to Boran's lack of certainty as to the actual cause of the air bag deployment, an issue to which the court agrees that neither Boran nor any other expert can testify, and because the Browns have failed to show, except with respect to opinion five and the second subpart of opinion four, regarding previous accidents, that Boran did not have sufficient facts or data, use reliable principles and methods, or apply those principles reliably to the facts, to reach his opinions, the Browns's Motion to Exclude the Testimony of Colm Boran, (doc. 72), is due to be denied in part as to Boran's first, second, third, and sixth opinions, as well as to subparts one and three and the ultimate conclusion of opinion four, and is due to be granted in part as to Boran's fifth opinion and to subpart two of opinion four, which involved the previous accidents.

B. Testimony of Patrick Donahue

Donahue is the electrical engineer who amended his expert report and whose testimony is therefore criticized by Boran, Ford's expert, for the fact that Donahue did not actually locate the short to ground that caused the airbag to deploy, as he had stated in his original expert report. Specifically, while Donahue's original report contains the opinion that the air bag deployed because of the following two conditions, 1) that "[t]he short to

ground found in the passenger side primary sensor circuit completed the circuit between the ground terminal of the driver's side airbag module and the ground terminal of the battery," and 2) "[t]he safing sensor closed when the passenger door was closed," causing the circuit closure, (doc. 83-4 at 7), Donahue's amended report admits that he did not find the specific short to ground that caused the air bag to deploy, instead acknowledging that the short he found during his vehicle inspection "is consistent with a disconnected diagnostic monitor module," (doc. 83-3 at 2). The amended report also retracts any suggestion that Donahue had located the short to ground and makes a much more general finding, without any clear reasoning behind it, that there must have been some short to ground that caused the circuit closure and the air bag deployment:

It is my opinion that one of the conditions that caused the airbag deployment was a short to ground that completed the circuit between the ground terminal of the airbag module and the ground terminal of the battery. It was likely intermittent, and therefore difficult to find. This is consistent with the opinions offered in the report written by Colm Boran. It is not possible for the airbag to deploy without completing the circuit between the ground terminal of the airbag module and the ground terminal of the battery in some manner.

(*Id.*) In addition, Donahue opines that he does not believe that aftermarket wiring, or the age or condition of the vehicle, contributed to or caused the air bag deployment; in particular, Donahue notes that he did not find any evidence of accident-related damage of the wiring related to the airbag system. (*Id.*)

Donahue's original report includes several other opinions, including that 1) the air bag deployment could have occurred with the ignition switch in the "off" or "start" positions, 2) the Supplemental Inflatable Restraint ("SIR") system on the Browns's truck could have been designed differently to avoid the inadvertent air bag deployment,⁴ 3) none of the wiring or components to the SIR system had any aftermarket changes, and 4) only a short to ground in the air bag system that occurs at the same time as the safing sensor closes could have caused this kind of air bag deployment in a stationary vehicle, and not "an incorrect zener diode in the Z160 position of the circuit board."⁵ (Doc. 83-4 at 7-8.)

Ford challenges Donahue's opinions on three grounds: 1) that Donahue, while an electrical engineer, does not have the experience or competency with air bag systems necessary to render any opinions as to what might have caused the air bag deployment, 2) that Donahue's opinions are speculative and not based on sound science, and 3) that Donahue's opinions will not help the trier of fact. (Doc. 83.) Underlying all of these

⁴ In their opposition to Ford's motion to exclude Donahue's testimony, the Browns agree to withdraw any "alternative design" opinions that Donahue has offered as "unneeded." (Doc. 93 at 19 n.8.) Thus, the court excludes these opinions and will not allow Donahue to testify regarding any theories of alternative designs that might have prevented the air bag deployment.

⁵ With respect to this last opinion, the court notes that, according to counsel for both parties at the *Daubert* hearing, there is no dispute that there was a short to ground and that, pursuant to the design of the Browns's truck's air bag circuitry, there must have been a simultaneous short and a closure of the safing sensor in order for the air bag to deploy when the vehicle was in a stationary position. The dispute is instead confined to whether the short was the result of a manufacturing defect, and whether the safing sensor closure was due to a design defect. Moreover, based upon inspection of the subject vehicle's air bag system, neither party continues to contend that an incorrect zener diode was involved in the incident in any way.

objections is Ford's repeated explanation for Donahue's amendment to his expert report, correcting his error that he had located the short to ground that contributed to the air bag deployment, an error that Ford contends is evidence that Donahue does not have the requisite expertise to offer reliable opinions.

Obviously, since Donahue has retracted his opinion that he located the specific short to ground that contributed to the air bag deployment, the court excludes any of Donahue's opinions that in any way rely upon this erroneous information.⁶ Although Donahue admits to having no substantive experience with the design or crash-testing of air bag systems, (doc. 83-5, Donahue Dep. at 46:3–13, Aug. 15, 2007), the court does not find, as Ford urges, that Donahue is unqualified to testify about the air bag circuit in the Browns's truck; indeed, Donahue testifies that he has worked on the “electrical side” of air bag systems, (*id.* at 45:5–6), so in conjunction with his other electrical engineering qualifications, the court deems him generally qualified to render electrical engineering opinions. Nevertheless, the court concludes that only Donahue's opinion that the air bag deployment could have occurred either in key-on or key-off ignition positions, which is based on his electrical circuitry knowledge and which responds specifically to Boran's first opinion, as well as Donahue's opinion that there was no aftermarket wiring present in the SIR system, an opinion that is based upon undisputed personal observations of the SIR system in the Browns's truck, are grounded in a reliable factual basis and

⁶Of course Donahue may be cross-examined about his initial opinions.

methodology and are thus admissible under Rule 702 and *Daubert*. The remainder of Donahue's opinions, to the extent that any remain standing, are inadmissible because Donahue's testimony has not met the requisite standards.

C. Testimony of Geoffrey Mahon

Ford objects to three of the opinions offered by Geoffrey Mahon ("Mahon"), one of the Browns's engineering experts: 1) that the "path to ground" in the air bag circuitry that contributed to the air bag deployment was more than likely the result of a manufacturing defect; 2) that the placement of the safing sensor, which closed as the result of a door slam, was a design defect; and 3) that there was an alternative, safer design for the placement of the safing sensor that would have situated it in a more protected location. (Doc. 79 at 10–16; Doc. 79-5, Mahon Expert Report, at 4–5.) Mahon based his opinions "upon reasonable engineering certainty, [his] examination of the available documents, communications with other experts, inspection of the vehicle, and [his] experience and knowledge." (Doc. 79-5 at 4.) Although Ford generally argues that Mahon's opinions are not based on a valid methodology, and are instead mere speculation that will not aid the factfinder, Ford did not raise any objections to Mahon's qualifications. (Doc. 79.)

With respect to Mahon's manufacturing defect and design defect opinions, Ford specifically contends that since Mahon himself did not locate the path to ground (*i.e.*, short circuit), and instead relied upon the findings of Donahue, who eventually retracted

his testimony that he had located the path to ground that caused the air bag deployment, Mahon's opinion is unreliable. Indeed, Mahon admitted in his deposition that his only evidence of the location of the path to ground was Donahue's apparent discovery of the path to ground while Mahon and Donahue were jointly inspecting the vehicle; Mahon demonstrates no independent knowledge of the precise location of the path to ground, although he does state that, according to electrical principles, the path to ground would have to be between the power source and the air bag initiator in order to deploy the air bag. (Doc. 92-2, Mahon Dep., at 81:6–82:6, 83:18–85:1, Aug. 13, 2007.) In addition, Donahue did amend his expert report to admit that he did not find the specific path to ground during his inspection of the Browns's truck, as he had previously reported. (Doc. 83-3 at 2.)

The court agrees with Ford that, to the extent that Mahon is offering the opinion that a manufacturing or design defect was indeed the actual cause of the air bag's inadvertent deployment, Mahon's opinions are inadmissible because they rely upon Donahue's opinions, which the court has found due to be excluded, as well as for the same reasons discussed in Part II.A with respect to Boran's causation opinions. In fact, since Mahon showed his ignorance of the components of an air bag circuit by relying upon Donahue's mistaken assumption that a shorting bar in the Browns's truck was the short that was partially responsible for the air bag deployment, the court views Mahon's testimony on actual causation with even greater skepticism than it does Boran's, but

essentially finds neither expert's testimony as to the actual or most likely cause admissible under Rule 702 and *Daubert*. Thus, while Mahon might be able to opine what did *not* cause the air bag deployment, he simply does not have a sufficient factual basis on which to apply any engineering or other scientific principles in order to reach any positively-stated conclusion regarding causation. The first two of Mahon's opinions to which Ford objects are therefore due to be excluded.

The third opinion, however, that there was an alternative, safer design for the placement of the safing sensor, is admissible because it is based upon Mahon's well-established experience with safing sensors and upon his factual observations that all other Ford vehicles use a design that places the sensors in the vehicle's central tunnel, rather than in the "b-pillar." (*Id.* at 5.) Although the court agrees with Ford that Mahon cannot use any of the evidence about Ford crash tests that Mahon mentioned in his deposition but that he did not provide with his Rule 26 report, (doc. 92:2 at 149:8–150:19), there is still ample evidence in Mahon's report to support his experience-based opinion about alternative safing sensor placement. Specifically, in the "Examination" section of his report, Mahon discusses the various problems with the location of the sensor in the F-150 truck and also notes that the F-150 sensor's location in the b-pillar is unique among Ford vehicles. (Doc. 79-5 at 2.) As a result, Mahon's opinion regarding the safing sensor design is admissible under Rule 702, although he cannot cite to evidence of crash tests that were not discussed in his expert report.

Since some of Mahon's opinions are admissible under Rule 702 and some are not, Ford's Motion to Exclude Plaintiffs' Designated Expert, Geoffrey Mahon, Under Rule 702, (doc. 78), is due to be denied in part with respect to Mahon's opinion about an alternative design for the safing sensor placement, but is due to be granted with respect to Mahon's opinions regarding causation from either a manufacturing or design defect.

III. CONCLUSION

Based on the foregoing, the Browns's Motion to Exclude the Testimony of Colm Boran, (doc. 72), Ford's Motion to Exclude Plaintiffs' Designated Expert, Geoffrey Mahon, Under Rule 702, (doc. 78), and Ford's Motion to Exclude Plaintiffs' Designated Expert, Patrick Donahue, Under Rule 702, (doc. 82), are due to be granted in part and denied in part, with the following specific restrictions on these expert's testimony.

Boran is not permitted to testify to any opinions regarding the actual cause or causes of the air bag deployment, and he is specifically not permitted to opine about the Browns's truck's previous accidents and their contribution to the deployment, the causes of the admitted intermittent short to ground, or whether the deployment was caused by a design defect. All other opinions consistent with those enumerated in Boran's expert report are admitted.

Donahue is not permitted to testify to any opinions other than that involving the possibility of air bag deployment in either the key-on or key-off ignition position, and that

involving the presence of aftermarket wiring in the SIR system. All other opinions consistent with those enumerated in Donahue's expert report are excluded.

Mahon is not permitted to testify to any opinions regarding the actual cause or causes of the air bag deployment, and he is specifically not permitted to opine that a manufacturing or design defect contributed to the air bag deployment. All other opinions consistent with those enumerated in Mahon's expert report are admitted.

An order will be entered contemporaneously with this Memorandum Opinion.

DONE, this 30th day of September, 2008.

Sharon Lovelace Blackburn

SHARON LOVELACE BLACKBURN
CHIEF UNITED STATES DISTRICT JUDGE